

Technical Bulletin

Made In U.S.A.

Instructions

SATURN-M

A Dual-Light and Self-Cure Core Build-Up Material

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OUTSTANDING FEATURES OF THE MATERIAL

- The restorative cures to great depths with light induced curing mechanism, without the necessity of mixing.
- When mixed with Paste Additive or Liquid Additive, the restorative sets fully irrespective of the thickness of the restoration or accessibility to light.
- Virtually unlimited working time in light-cure mode; convenient working time in self-(chemically) cured mode.
- Two shades: one contrasting for ease of distinguishing from tooth structure; the other natural for use under semi-transparent ceramics.
- Well balanced x-ray opacity permits easy distinguishing from tooth structure, as well as from pins and posts.
- Moldable, non-sticky, yet still has adhesive consistency.
- Allows for controlling consistency, wherever desirable, by adding either liquid or paste-type catalyst for dual-cure.
- Contains moderately hard filler for easier carving and shaping.
- Does not require refrigeration; long shelf life at ambient temperatures.
- Also suitable for cementing posts.
- Substantial chair-time savings.

GENERAL INFORMATION

Saturn-M differs significantly from conventional restoratives as it was formulated to meet specific requirements, and provide features most desirable for core build-up materials. This includes a well balanced x-ray opacity, which allows the dentist to distinguish the material from both tooth structure and posts, carvability, outstanding depth of cure (to maximize the advantage of light-cure feature), and extended working time when cured in self-cure mode. All pertinent characteristics of the cured material exceed the requirements of the American Dental Association Specification No. 27, for Type I (lower grade) and Type II (higher grade) filling restoratives. The requirements for core build-up materials are not as demanding as for filling restoratives, as they are not directly exposed to mastication forces, and are less susceptible to chemical deterioration resulting from exposure to oral environment. The mechanical properties of Saturn-M are notably superior to that of the properties of glass ionomer type cements.

COMPARISON OF PROPERTIES OF CURED SATURN-M WITH GLASS IONOMER CEMENTS AND WITH THE REQUIREMENTS OF ADA SPECIFICATION NO.27 FOR COMPOSITE RESTORATIVES

PROPERTY	SATURN-M	TYPE I	TYPE II	GLASS IONOMER
Compressive Strength	30761.2 psi (212 MPa)	not specified	not specified	14,500-2,500 psi (100-190 MPa)
Diametral Tensile Strength	6384.4 psi (45 MPa)	3480 psi (24 MPa)	4930 psi (34 MPa)	1300-2170 psi (9-15 MPa)
Hardness (Barcol)	70	not specified	not specified	75-86
Solubility in Water	virtually insoluble	not specified	not specified	0.1 -2.0%*
Working Time at 23C in self-cure mode	135 seconds	min. 90 sec	min. 90 sec	120-240 sec*
Setting Time at 23°C in self-cure mode	240 seconds	max. 8 mm.	max. 8 mm.	7-15 min. *

*depending on brand and variations in powder/liquid ratios and techniques of application.

APPLICATION TECHNIQUES

Saturn-M may be used without pins or posts, or in conjunction with them, if their use is deemed desirable or necessary.

The restorative may be applied directly onto the prepared tooth, using plastic or metal instruments, or by using transparent crown forms.

LIGHT-CURE MODE ONLY

When the thickness of the restoration is less than 4mm, or when the restorative is applied in more than one layer the **Restorative Paste** Natural or Contrast Shade may be **used alone**, ie., without mixing with the Paste Additive or Liquid Additive just apply and light-cure. Cure may be accomplished with any commercial dental curing light operating in a visible wavelength range. Depending on the desired depth of cure and light intensity, the necessary curing time may vary from 20 to 90 seconds. The tip of the light should be placed as close to the restoration as possible, and moved slowly around its periphery and over its top.

DUAL-CURE MODE

For curing in thick layers, for cementing posts, or in situations where thinner consistency of the restorative is desired, the **Restorative Paste should be mixed with Paste Additive, or Liquid Additive**. The mixing with Paste Additive, or Liquid-Additive will result in triggering the self-cure mechanism while not interfering with the ability of the material to cure by light. The clinician has the convenience of choice between liquid and paste type accelerators. The liquid form is preferred for cementing posts and in applications where the use of low viscosity material is indicated, because of perceived difficulties in placement, and/or filling narrow spaces. The paste-type accelerator is generally preferred in situations where the cure of large bulks of the material is involved. Its use allows the dentist to take advantage of the self-cure feature of the restorative while preserving its moldable consistency.

MIXING PROCEDURE FOR DUAL CURE MODE

FOR THICKER CONSISTENCY	FOR THINNER CONSISTENCY
Mix approximately 1 part of Paste Additive with 4 parts of Restorative Paste in either Natural, or Contrast shade. The restoration will cure in 240 seconds, or speed up the cure by light curing for 20 to 90 seconds.	Dispense two drops of Liquid Additive next to the Restorative Paste in either Natural, or Contrast shade. Mix paste with liquid, incorporating the liquid into the paste in small increments until desired consistency is obtained. The restoration will cure in 240 seconds. You may speed up the cure by light curing for 20 to 90 seconds*.

*The restorative/liquid ratio may vary giving the clinician possibility to adjust consistency of the mixture, however the working and setting time in self cure mode, and depth of cure in light cure mode, remain virtually the same. After the material is cured, in either self-or light-cure mode, it can be shaped in conventional manner using the same tools as for contouring composite restorative materials.

FUNDAMENTAL RULES

- Saturn-M may be used in conjunction with, or without pins and posts. On vital teeth it is recommended to apply conservative cavity preparation; in rounded retentive areas, it is also recommended to use Calcium Hydroxide base liner especially in situations involving proximity of the pulp, and over soft and decay-prone dentin, in order to provide an additional measure of protection against secondary decay.
- Conventional canal preparation, including toiletry with 15% Sodium Hypochloride solution and thorough drying of the preparation, is critical for providing maximum retentive strength. An alternative method of cavity preparation may include the use of Polycarboxylic acid solution with, or in place of, the Sodium Hypochloride solution.
- In order to achieve micro mechanical retention for maximum bond strength it is recommended to etch any enamel present.
- **Saturn-M is Bis-GMA composite material an ingredient that in some people can cause an allergic reaction or result in skin or tissue irritation. Avoid contact with the core build-up paste. If contact occurs, wash immediately with soap and warm water. Improper use may result in allergic reaction of skin, or tissue irritation, in which case discontinue use of the product.**

CUSTOM SATURN-M KITS AVAILABLE

Saturn-M all contras, or all natural, or any combinations desired.
All kit components, accessories and auxiliaries are available separately.

STORAGE

Refrigeration will extend shelf life. Keep syringes tightly capped between uses.

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Material Safety Data Sheet

U.S. Department of Labor

May be used to comply with
OSHA'S Hazard Communication standard
29 CFR 1910-1200. Standard must be
consulted for specific requirements

Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

Identity (as Used on Label and List) **Saturn M-Core Build-up Material**

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that

Section I

Dent Zar Inc. Emergency Telephone Number: 800-444-1241 or 818-857-3010 Phone Number for information: 800-444-1241
22156 Sherman Way, Unit B
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Date Prepared 01-27-97

Signature of Preparer (Optional)

Section II- Hazardous ingredients/identity information

Hazardous Components (Specific Chemical Identity: Common Name(s))	Other Limits	OSHA PEL ACGH TLV	Recommended % (optional)
SIUCON DIOXIDE (60676-66-01)		10 mg/m ³	10 mg/m ³
BARIUM GLASS (65997-18-4)		10 mg/m ³	10 mg/m ³
METHACRYLATE MONOMERS (1565-94-2)		n.e.	n.e.
BENZOYL PEROXIDE (94-35-0)		5 mg/m ³	5 mg/m ³
TERTIARY AMINES			
PHOTOINITIATOR (24950-42-0)		n.e.	n.e.

Section III - Physical/Chemical Characteristics

Boiling Point N/A Specific Gravity (H2O=1) N/A
Vapor Pressure (mm Hg) N/A Melting Point N/A
Vapor Density (AIR=1) N/A Evaporation Rate (Butyl Acetate=1) N/A
Solubility in Water INSOLUBLE

Appearance and Odor TINTED PASTE, CHARACTERISTIC ODOR.

Section IV - Fire and Explosion Data

Flash Point (Method Used) N/A Flammable Limits N/A LEL UEL
Extinguishing Media CHEMICAL FOAM, CARBON DIOXIDE OR DRY CHEMICAL
Special Fire Fighting Procedure NONE
Unusual Fire and Explosion Hazards NOT KNOWN AS OF TODAY

Section V-Reactivity Data

Stability Unstable X Conditions to Avoid EXTREME HEAT, SUN LIGHT OR VISIBLE LIGHT.
Stable X

Incompatibility (Material to Avoid) PEROXIDE FOR BASE PASTE AND AMINE FOR CATALYST PASTE.

Hazardous Decomposition or Byproducts

Hazardous May Occur X Conditions to Avoid EXTREME HEAT; EXPOSURE TO LIGHT

Polymerization Will Not Occur

Section VI- Health Hazard Data

Route (s) of Entry Inhalation? YES Skin? YES Ingestion? YES
Health Hazards (Acute and Chronic) MAY OCCUR FOR SPECIAL ALLERGIC PEOPLE OR OVEREXPOSED PEOPLE. SEE A PHYSICIAN PROMPTLY.

Carcinogenicity N/A NTP? N/A ARC Monographs? N/A OSHA Regulated? N/A

Signs and Symptom of Exposure N/A

Medical Conditions Generally

Aggravated by Exposure N/A

Emergency and First Aid Procedures IF SKIN IS CONTACT OCCURED WASH OFF WITH SOAP AND WATER IMMEDIATELY. SEE A PHYSICIAN PROMPTLY SHOULD INGESTION OCCUR.

Section VII -Precaution for Safe Handling and Use

Steps to be taken in case material is released or spilled CLEAN UP USING GLOVES AND DISPOSE IN AN APPROVED MANNER.
Waste Disposal Method DISPOSE IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS.

Precautions to be taken in handling and storing AVOID CONTACT WITH SKIN TISSUE, GUMS AND EYES.

Other Precautions KEEP CLOSED WHEN NOT IN USE.

Section VIII - Control Measures

Respiration Protection (specify type) GENERALLY NOT NECESSARY

Ventilation Local Exhaust RECOMMENDED Special
Mechanical (General) Other

Protective Gloves ALWAYS RECOMMENDED Eye Protections RECOMMENDED

Other Protective Clothing or Equipment

Work/Hygienic Precaution NORMAL SAFE PRACTICES. USE ONLY IN A HIGHLY PROFESSIONAL MANNER.